LISTING OF THE CLAIMS:

Claim 1 (Cancelled).

Claim 2 (Cancelled).

Claims 3-11 (Cancelled).

Claim 12 (Cancelled).

Claim 13 (Cancelled).

Claim 14 (Currently Amended) A method for analyzing the data structure of a DNA or RNA sequence target array including a plurality of different elements, the method comprising the steps of:

(a) generating a first array having elements corresponding to the elements of the target array by (i) traversing the target array in a predetermined direction, (ii) replacing in the first array a corresponding first occurrence of each element in the target array with information that indicates that said first occurrence is the first occurrence of said each element, and (iii) replacing in the first array each corresponding subsequent occurrence of each element in the target array with information that represents a location of the subsequent occurrence of each element in the target array relative to a prior occurrence of each element in the target array;

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(b) generating a second array having elements corresponding to the elements of the target array by (i) traversing the target array in a predetermined direction and replacing in the second array a corresponding first occurrence of each element in the target array with information that indicates that said first occurrence is the first occurrence of said each element, (ii) replacing in the second array a corresponding next occurrence of an element in the target array that is a given complement to said first occurrence of said each element with information that represents a location of said next occurrence in the target array relative to the first occurrence of said each element, and (iii) replacing in the second array each corresponding subsequent occurrence of an element in the target array having a previous occurrence of the given complement of said element with information that represents a location of said subsequent occurrence of the element relative to the previous occurrence of said given complement; ~~and~~

(c) analyzing the structure of the target array by using the first array and the second array; and

(d) displaying said generated first and second arrays on a computer screen.

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